the storage capacity is to be exceeded by a write request from the host computer, the library control unit **19** displays a message on the display unit **18** requesting an operator to insert a new cartridge in the optical disc unit **14**. Once an optical disc **2** is loaded in the optical disc unit **14**, the library control unit **19** directs the data that is in excess of the capacity of optical discs **1** to be stored on optical disc **2**. In conjunction with storing the excess data on optical disc **2**, control unit **19** stores a designated track of optical disc **2** in its memory as management data. The management data includes the ID number of the optical disc **2** and the data required for retrieving the excess data just recorded, such as the calling address determined by a library management software system in the computer, the leading address, the track address, the selector address and the data length concerning the block of data recorded on the optical disc **2**. In this regard, it is preferable that discs **1** and **2** are formatted in the same manner.

The storage and retrieval system performs writing, reading and copying or duplicating of data. FIGS. **3(a)** and **3(b)** taken together show a flow chart showing the basic operation of one embodiment of a data writing operation. The data writing operation is initiated when the host computer issues a data write command in step **301**. Then, the disc ID and address of the disc is examined by the library control unit **19** in step **302** to determine whether or not there is a free disc within sealed casing **5** for writing the data (step **303**). If an available optical disc **1** is present, then the data is written onto the selected optical disc **1** by following the steps of selecting the disc by the access unit (accessor) in step **304**, loading the optical disc in the optical disc unit **8** in step **305**, positioning the optical read/write head in step **306** and writing the data in steps **307–309**. More specifically, in step **307** and **308**, it is determined whether the data writing operation is continuing or not, and in step **309** it is determined whether any data remains to be written.

If in step **303** it is determined that the optical discs **2** in sealed casing **5** do not have sufficient free space for completing the requested data writing operation, on the other hand, the flow proceeds in the direction of arrow **303a** to block **310** shown in FIG. **3(b)**. In step **310**, a message is displayed on display unit **18** that requests the operator to insert a cartridge **3** with optical disc **2** contained therein into the optical disc unit **14**. The cartridge is inserted in step **311** and the optical disc **2** is loaded in step **312** and the completion of the loading operation is determined in step **313**. Once the optical disc **2** is loaded in the optical disc unit **14**, the optical read/write head is positioned in step **314** and the data written in step **315**. The writing operation is monitored in step **316** to determine when the writing is completed. Then, the flow proceeds to step **317** whereupon the ID number of the optical disc **2** in the optical disc unit **14** and the data required for retrieving the just recorded access data are written to the library control unit **19** in step **317**. With this writing operation completed, the flow proceeds in the direction of arrow **317a** to node **320** shown in FIG. **3(a)**, whereupon it is determined that the original request from the host computer to write the data is ended in steps **318** and **319**.

The data reading operation is similar to that of the data writing operation. Upon receiving a data read command, library control unit **19** detects whether the optical disc requested by the computer is in the sealed casing **5** or not. If not, the ID of the necessary optical disc **2** is displayed on display unit **18** with the request

that the operator insert the required disc. The operator then inserts the necessary disc in the optical disc unit **14** and the directory of the optical disc **2** is read by the library control unit **19** to confirm that the correct disc has been inserted. Then, the optical read/write head of the optical disc unit **14** is positioned to read the disc **2** and transfer the read out data to the library control unit **19**. Although this procedure requires intervention by an operator, the flexibility of using the optical disc library in sealed casing **5** is increased since 100% of the storage capability of the disc storage media can be freely accessed.

Another operation capable of being performed by the storage and retrieval system of the present invention is a data copying operation that does not involve the host processor, explained herein with respect to duplicating data of an optical disc **2** on an optical disc **1**. First, the operator loads optical disc **2** in the optical disc unit **14** and inputs the ID of the source data and the address and data length of the data to be copied through the keyboard of the display keyboard unit **18**. The library control unit **19** selects a free optical disc **1** in accordance with the management data of these discs and the selected disc is loaded on the optical disc unit **8**. The data read from optical disc **2** is then stored in the buffer memory **19(a)** of the library control means **19**. When the optical disc unit **8** writes data into a predetermined area of disc **1**, the library control unit **19** sends the data from the buffer memory **19(a)** to the optical disc unit **8** and writes the data on the optical disc **1**. Then, display unit **18** displays the ID of optical disc **1** and the address of the location where the data is written. When data is to be copied onto a cartridge disc **2** from an optical disc **1**, a similar procedure is performed in reverse.

A second embodiment of the present invention is shown in FIG. **4**, which has components that perform the same functions as those identified by common reference numerals in FIG. **1**. In the second embodiment, a stacked type optical disc unit **43** is disposed in sealed casing **5**. The optical disc unit **43** has a plurality of optical discs **1** stacked on a common shaft **41** and turned by motor **40**. Optical read/write heads **42** are provided for each of the recording phases of the optical discs. Alternatively, hard magnetic discs can replace the optical disc system shown in FIG. **4**. Whether or not optical or hard magnetic discs are used in the second embodiment for the storage and retrieval system of the present invention, the operation of the system is the same. Mainly, storage and retrieval of data is performed by a host computer by accessing the disc unit **43**, unless a write operation specifies the writing of the data in excess of the free space available in the optical disc unit **43**. In this case, the excess data is written to the optical disc unit **14** as in the first embodiment. Similarly, data is read from the optical disc unit **43** unless a data read operation requests data that has been written on an optical disc **2**, in which case the read operation is handled in the same way as explained with respect to the first embodiment.

By the present invention, the storage capacity of the storage and retrieval system of the present invention is made more flexible and effectively increased during operation of the system. When the quantity of data to be written temporarily exceeds the storage capacity of the storage media encased in the sealed casing, the excess data is written to a juxtaposed interchangeable read/write unit automatically by a control unit. This prevents the CPU from experiencing a time out during a data